

a power signal to said manipulator via a first path when said control device is coupled to said manipulator; and

(d) a power source selectively coupled to said manipulator via a second path, wherein when said power source is coupled to said manipulator via said second path, the robot body is freely movable without being controlled by said manipulator.

22. (New) The industrial robot of claim 21, further comprising a switching device operative for coupling either said control device to said manipulator via said first path or said power source to said manipulator via said second path.--

REMARKS

I. Introduction

In response to the pending Office Action, Applicant has amended claims 1 and 9 so as to clarify the intended subject matter of the present invention. Specifically, claims 1 and 9 were amended to recite that the control device provides a power signal to the manipulator via the recited first path. Support for the amendments to claims 1 and 9 can be found for example on page 7, lines 5-8 of the specification. Claims 1, 2, 4 and 8-13 were also amended so as to place the claims in a more grammatically correct state, as well as to address the informalities noted by the Examiner in paragraph 6 of the Office Action. Finally, Applicant also submits new claims 19-22 for consideration.

Specifically, new claims 19 and 20 recite that the signal supplied from the control device to the manipulator via the first path enables operation of the manipulator. Support for new claims 19 and 20 can be found throughout the specification. New claim 21 essentially tracks original claim 1. New claim 22 recites the switch device recited in original claim 8. No new matter has been added.

Applicant notes with appreciation the indication of patentable subject matter set forth in claims 2-8 and 14-18.

For the reasons set forth below, Applicant respectfully submits that claims 1 and 9, as amended, are also patentable over the cited prior art reference.

II. The Rejection Of Claims 1 And 9 Under 35 U.S.C. § 102

Claims 1 and 9 were rejected under 35 U.S.C. § 102 as being anticipated by USP No. 6,356,806 to Groh. Applicant respectfully submits that as amended claims 1 and 9 are patentable over Groh.

As recited by amended claims 1 and 9, the recited first path which couples the control device to the manipulator also functions to provide a power signal to the manipulator so as to allow for operation of the manipulator. The recited second path functions to selectively couple a commercial power supply to the manipulator. Thus, as is clear, the first path and second path are separate paths that couple distinct signals to the manipulator. As explained in detail in the specification, during normal operation, the

control device provides a signal to the manipulator via the first path, which functions in part to release the manipulator brake mechanism and allow operation of the manipulator in accordance with other control signals received from the control device. However, when the control device is disabled or the cable between the control device and the manipulator is disconnected, a signal which operates to release the manipulator brake mechanism can be coupled to the manipulator via the second path so as to allow for movement of the manipulator.

Turning to the cited prior art, Groh does not disclose the use of a first path and a distinct second path for providing power signals to the manipulator. As shown in Fig. 1, Groh discloses the use of a power module 13 disposed between the manipulator 2 and the control card 12. Assuming the power module 13 represents the first path for providing a power signal to the manipulator, there is no second path disclosed in Groh for providing a power source to the manipulator. Thus, if the power module 13 was disconnected, there is no alternative path for supplying a power signal to the manipulator.

Moreover, it is noted that the path between the control unit 11 and the robot control card 12, which is asserted to corresponding to the claimed first path in the Office Action, also fails to satisfy the limitation recited by amended claims 1 and 9. As stated above, the claimed first path provides a power signal from the control device to the manipulator. Clearly, the foregoing path of Groh fails to satisfy this limitation because

the path does not even extend to the manipulator. Also, it cannot be properly asserted that the first path of Groh also includes the power module 13, because if this position is taken, then as stated above, Groh clearly fails to disclose the second path.

Accordingly, as anticipation under 35 U.S.C. § 102 requires that each element of the claim in issue be found, either expressly described or under principles of inherency, in a single prior art reference, *Kalman v. Kimberly-Clark Corp.*, 713 F.2d 760, 218 USPQ 781 (Fed. Cir. 1983), for at least the foregoing reasons, it is clear that Groh does not anticipate amended claims 1 or 9.

III. Request For Notice Of Allowance

Having fully responded to all matters raised in the Office Action, Applicants submit that all claims are in condition for allowance, an indication for which is respectfully solicited.

If there are any outstanding issues that might be resolved by an interview or an

Examiner's amendment, the Examiner is requested to call Applicants' attorney at the telephone number shown below.


Respectfully submitted,

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VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE CLAIMS:

Claims 1, 2, 4 and 8-13 have been amended and new claims 19-22 have been added as follows:

1. (Amended) An industrial robot, comprising:

(a) a robot body;

(b) a manipulator to control [the] an operation of said robot body;

(c) a control device to control said manipulator;

(d) a first path disposed between said manipulator and said control device, said control device providing a power signal to said manipulator; and

(e) a second path disposed between a commercial power source and said manipulator.

2. (Amended) The industrial robot of claim 1, wherein when a voltage supplied from said commercial power source in said second path is applied to said manipulator, [and then] said robot body becomes freely movable without being controlled by said manipulator.

4. (Amended) The industrial robot of claim 3, wherein when the voltage supplied from said commercial power source in said second path is applied to said manipulator, [thereby releasing] said brake is released, and [then] said robot body becomes freely

movable.

8. (Amended) The industrial robot of claim 5, further comprising:

(g) a switch device disposed between said control device and said voltage transformer,

wherein said switch device serves to switch said first path, and when said first path is switched on, said brake is controlled by said control device [and becomes released], and

when said first path is switched off, said brake becomes released due to the voltage transformed by said voltage transformer in said second path.

9. (Amended) A method of operating an industrial robot having a robot system comprising a robot body; a manipulator to control the operation of said robot body; a control device to control said manipulator; a first path disposed between said manipulator and said control device, and a second path disposed between a commercial power source and said manipulator; said method comprising the steps of:

[(a) feeding a robot system,

said robot system comprising

a robot body,

a manipulator to control the operation of said robot body,

a control device to control said manipulator,
a first path disposed between said manipulator and said control device, and
a second path disposed between a commercial power source and said
manipulator;]

[(b)] (a) operating said manipulator by controlling said control device by said first
path, thereby controlling the operation of said robot body, said control device providing
a power signal to said manipulator; and

[(c)] (b) freely moving said robot body without being controlled by said
manipulator [,] by applying a voltage from said commercial power source to said
manipulator via said second path when [it] said manipulator is unable to receive said
power signal from [control] said control device [by] via said first path.

10. (Amended) The method of operating an industrial robot of claim 9, wherein
said manipulator includes a motor to drive said robot body, and a brake to brake said
motor;

the step [(b)] (a) includes a step of controlling said control device by said first
path, and operating said manipulator, while holding said brake, thereby controlling the
operation of said robot body; and

in the step [(c)] (b), when [it] said manipulator is unable to be controlled by
[control] said control device [by] via said first path, a voltage is supplied from said

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commercial power source to said brake, thereby releasing said brake, and then said robot body becomes freely movable without being controlled by said manipulator.

11. (Amended) The method of operating an industrial robot of claim 10, wherein said robot system further comprises a voltage transformer disposed between said commercial power source in said first path and said manipulator, and

in the step [(c)] (b), when [it] said manipulator is unable to be controlled by [control] said control device [by] via said first path, the voltage supplied from said commercial power source is transformed by said voltage transformer to a voltage for releasing said brake, and the transformed voltage is applied to said brake, and then said robot body becomes freely movable without being controlled by said manipulator.

12. (Amended) The method of operating an industrial robot of claim 10, wherein said robot system further comprises a switch device disposed between said control device and said manipulator;

in step [(b)] (a), when said switch device [switches] selects said first path so that the first path is electrically connected to said manipulator, said brake is controlled by said control device and becomes released, and then said robot body becomes freely movable, and

in step [(c)] (b), when said switch device [switches said first path] selects said

second path so that the first path is switched off, said brake becomes released due to the voltage supplied from said commercial power source in said second path, and then said robot body becomes freely movable.

13. (Amended) The method of operating an industrial robot of claim 10, wherein said manipulator further includes a brake releasing device to release said brake, and in the step [(b)] (a) and step [(c)] (b), said brake is released, and thereby, said robot body becomes freely movable.

Please add new claims 19-22 as follows:

--19. (New) The industrial robot of claim 1, wherein said power signal enables operation of said manipulator.

20. (New) The method of operating an industrial robot of claim 9, wherein said power signal enables operation of said manipulator.

21. (New) An industrial robot, comprising:

(a) a robot body;

(b) a manipulator to control an operation of said robot body;

(c) a control device for controlling said manipulator, said control device providing

a power signal to said manipulator via a first path when said control device is coupled to said manipulator; and

(d) a power source selectively coupled to said manipulator via a second path, wherein when said power source is coupled to said manipulator via said second path, the robot body is freely movable without being controlled by said manipulator.

22. (New) The industrial robot of claim 21, further comprising a switching device operative for coupling either said control device to said manipulator via said first path or said power source to said manipulator via said second path.--